



SpyderLENSCAL™

datacolor 

User Guide

SpyderLENSCAL™

Contents

OVERVIEW

PROBLEM. SOLUTION. FEATURE. BENEFIT	4
5 EASY STEPS TO CALIBRATE YOUR LENSES	5

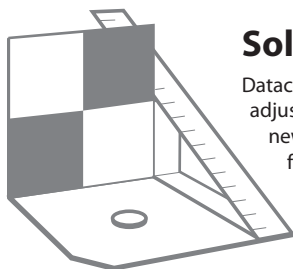
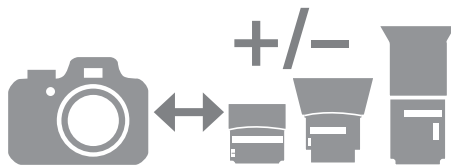
WORKFLOW

1. SETUP SPYDERLENSCAL	6
2. SETUP CAMERA	6
3. DISTANCE SETTING	7
4. SHOOTING ENVIRONMENT	7
5. TEST LENS ACCURACY	8
6. REVIEW TEST IMAGE	8
7. FOCUS CHECK	9
8. AUTOFOCUS CORRECTION	9
9. RETEST CALIBRATION SETTINGS	10

Overview

Problem

Photographers have enjoyed the benefit of autofocus for 25 years now and most professional DSLR cameras use through-the-lens optical autofocus sensors. Autofocus is a great convenience, but many still struggle with its accuracy and repeatability. The main reason for this is the variances due to the manufacturer's tolerances within the lens and the camera body itself. These tolerances can impair accurate focus performance and leave you with an image that is clearly out-of-focus.



Solution

Datacolor SpyderLensCal provides a fast and reliable method to measure and adjust the focus performance of your camera and lens combinations. Many newer models of popular DSLR cameras have a lens micro-adjustment feature to calibrate the autofocus and to store the custom settings on the DSLR body. SpyderLensCal was designed to aid in correcting the autofocus by providing a reference test system for the adjustments.

You can check the autofocus on any camera and lens combination! To calibrate and store custom autofocus settings you need a camera that supports autofocus adjustments. The supported cameras as of Feb 20th, 2011 are:

- Canon® (50D, 7D, 5DMkII, 1DMkIII, 1DMkIV, 1DsMkIII, 1DIV)
- Nikon® (D7000, D300, D300s, D700, D3, D3s, D3x)
- Sony® (A900, A850)
- Olympus® (E-30, E-620, E-5)
- Pentax® (K20D, K7D)

Feature

SpyderLensCal provides photographers with a fast, reliable method of measuring the autofocus performance on camera and lens combinations. It allows photographers to obtain razor-sharp focusing, using modern DSLR autofocus micro-adjustment. The SpyderLensCal device is affordably priced, compact, lightweight and durable, with integrated spirit level and tripod mount.

Benefit

SpyderLensCal allows photographers to easily calibrate their interchangeable lenses and recent DSLR bodies. There is no need to ship lenses and bodies back to the manufacturer any longer, if you have the tools to do it yourself.

Performing a lens calibration on each of your key autofocus lenses can improve the number of usable shots from a day's shooting. And with a rugged, portable device such as SpyderLensCal, photographers can carry the calibration solution in a photo bag and test and re-calibrate the autofocus in any location.

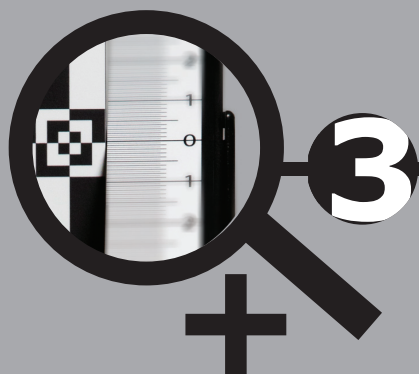
5 Easy steps to calibrate your lenses.

1 Setup your SynderLensCal



Autofocus and take a picture.

2



3

Check focus by reviewing the image.

Calibrate with focusing correction.

4



5 Evaluate the AF by taking a 2nd picture.

Workflow

1

Setup SpyderLensCal

Open up SpyderLensCal from its flat locking position and place the ruler in the correct orientation with the main target. The tripod mount on the bottom of SpyderLensCal allows for mounting on any tripod, including portable tripods. There is a bubble spirit level on SpyderLensCal's base to allow users to level the tripod for most effective alignment with the camera. Simply placing SpyderLensCal on a desk, table, or shelf works fine as well.



Click!



2

Setup Camera

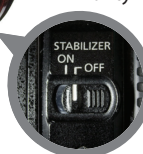
Decide which camera and lenses you want to calibrate. Setting the camera up on a tripod is very convenient, but not required. Using tripods does make the process simpler and easier.



Camera Settings

Be sure the camera and lens are set to autofocus and the stabilizing function is off. Use the widest Aperture setting (often 4.0 or 2.8) to produce the clearest example of the focal plane. In order to control the camera's aperture it's necessary to be in Aperture Priority mode or in Manual mode.

You may also maximize the contrast and sharpness setting of the camera, to make the readings of the SpyderLensCal easily readable.



3

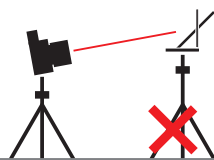
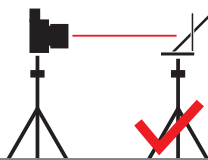
Distance Setting

Each camera lens combination is different and there's no universal distance between camera and SpyderLensCal to do the autofocus correction. For example: Canon's recommendation is a minimum distance of 50 times of the focal length but this is not practical for every lens. However, we recommend a distance of 5 - 10 times of the focal length, or place SpyderLensCal at the distance you use the lens most frequently.

For zoom lenses, use the longest focal length. That way, you achieve a more shallow depth of field and you have a more detailed view of the lines on the ruler.

Make sure, that SpyderLensCal and your camera are parallel positioned and are at the same height.

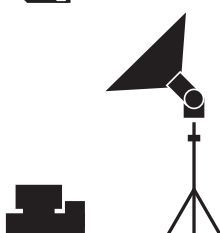
Optimal Distance = Distance Frequently Used / Focal Length x 5~10
e.g. 35mm x 5~10 = 17.5~35 cm



4

Shooting Environment

Choose a location with appropriate lighting for your autofocus calibration. Not too dark, not too much uncontrolled light directly behind the camera. Light from any other angle in front of the target location, or more than one, should be fine. Setting it up as a studio shoot is excellent, but not really necessary.

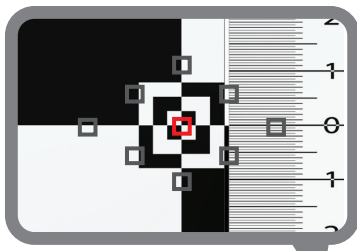


Workflow

5 Test Lens Accuracy

Take one or more shots of the target, aiming the camera at the small bullseye at the right edge of the vertical target.

This will minimize any error caused by not having the target exactly perpendicular to the axis of the lens. If your camera highlights the focus point it has chosen, that will confirm that the target plane has been selected as the intended focal plane.



6 Review Test Image

Select your target shot on the camera's LCD screen. Zoom in on the section of the ruler adjacent to the target. At the camera's maximum zoom examine the markings and numbers on the ruler to see which one is sharpest. That mark represents the center of focus, as defined by your camera and lens using their auto-focus system.

Recommendation

As the size of the camera LCD screen is limited, transfer the test image to your computer and review it full screen on your display/monitor.



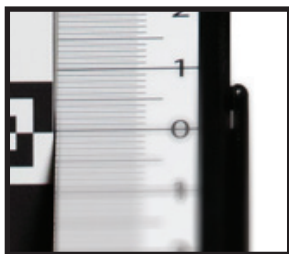
7

Focus Check

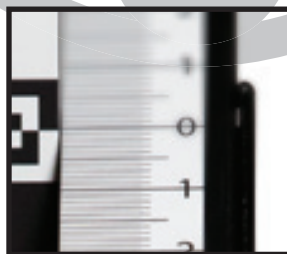
If your camera lens combination is calibrated correctly, then the line at "0" should be in sharp focus.

If the picture isn't sharp at "0", your camera lens combination is off!

Check the ruler and see whether the front or rear section is sharper. If the lines behind the "0" mark is sharper then the lens is "back focusing", if the front is sharper then the lens is "front focusing".



Back Focusing



Front Focusing

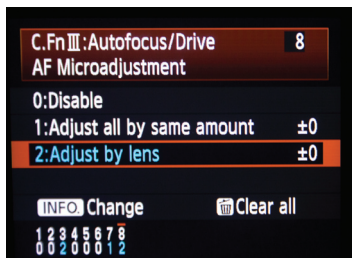
8

Autofocus Correction

To calibrate the "back or front focus" issue, enter the autofocus correction menu on your camera and select adjust by lens.

Calibration Settings

The numbers on the SpyderLensCal ruler indicates precisely how many centimeter the camera is front or back focusing, which give possibility to correct the focusing by steps in millimeter on your camera.



If you have a front focusing issue, then go forward in small steps and vice versa for the back focusing calibration.

Workflow

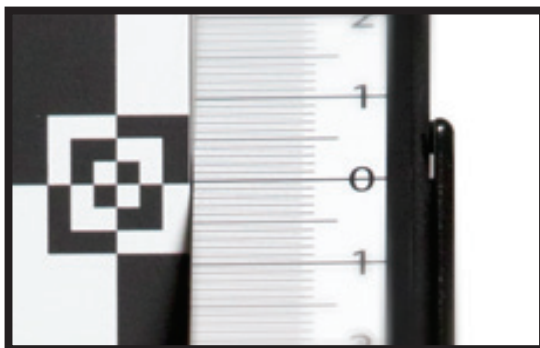
9

Retest Calibration Settings

Retest to determine if your adjustment was the ideal amount. If not, increase or decrease your adjustment until the sharpest zone is centered on the zero mark on the SpyderLensCal ruler. Before taking a new shot using autofocus, it is always good to de-focus the lens by hand, it ensures the autofocus is actually working, as sometimes when it's already almost focused, the camera would not do the auto focusing again.

Recalibrate As Needed

Repeat for other lenses and then recheck annually, or whenever your lenses have seen hard use or extreme temperatures, or as you acquire new ones!



Accurate Focusing

For more product info, videos on using SpyderLensCal and FAQs, please go to:

<http://www.datacolor.com/goto/SpyderLensCal>

Notes

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

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